UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,816	09/28/2000	Gregory A. Overkamp	10559/270001/P9277-ADI	9784

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EXAMINER
HARKNESS, CHARLES A

ART UNIT	PAPER NUMBER
2183	7

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/675,816	OVERKAMP, GREBORY A. ET. AL.	
	Examiner	Art Unit	
	Charles A Harkness	2183	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _10 November 2003_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-5,7,8 and 10-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,3-5,7,8 and 10-18_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   In view of Applicant's amendment to the title, the previous objection has been

withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1, 3-5, 7-8, and 10-18 are rejected under 35 U.S.C. 102(b) as being anticipated by

"Computer Organization and Design, The hardware/software interface" by John L. Hennessy and

David A. Patterson (herein referred to as Hennessy).

3.   Referring to claims 1 and 14 Hennessy has taught a method of handling instructions

within a processor comprising:

Decoding at least a portion of an instruction to determine a first destination and a second

destination of the instruction (Hennessy page 414, figure 5.48, the control logic decodes the

opcode portion of the instruction, parts 31-26, and determines what type of instruction it is, when

it's an arithmetic instruction, will forward the ALUOp to the ALU control, and will send a signal

to the register file to turn on the register write signal, wherein the register file is the second

destination and the ALU is the first destination);

Re-encoding only a portion of the instruction to a second re-encoded code used for said

first destination and forwarding the re-encoded instruction to said first destination (Hennessy

page 414, figure 5.48; the control unit in Hennessy has to both decode the opcode to determine

which type of instruction it is, and also re-encode the control instructions to be sent to operate the

ALU control; then the ALU control forwards controls to the ALU to perform an operation); and

Forwarding a different portion of the instruction, without re-encoding, to said second

destination (Hennessy page 414, figure 5.48; parts 16-25 of the instruction are send to the

register file, the second destination without being re-encoded).

4.   Referring to claim 3 Hennessy has taught wherein said first destination is a first

functional unit which operates based on op codes (Hennessy page 414, figure 5.48; the opcode

portion of the instruction is sent to the control unit, the control unit sends the ALUOp to the

ALU control which re-encodes the controls, and then the ALU control forwards controls to the

ALU to perform an operation).

5.   Referring to claim 4 Hennessy has taught further comprising sending at least a portion of

the decoded instruction to a second functional unit which operates based on decoded information

(Hennessy page 414, figure 5.48, the control logic decodes the opcode portion of the instruction,

parts 31-26, and decodes the opcode and determines what type of instruction it is, when it's an

instruction that stores data in the register file it will send a signal to the register file to turn on the

register write signal, wherein the register file is the second destination and the ALU is the first

destination).

6.   Referring to claim 5 Hennessy has taught further comprising determining a portion of the

coded instruction to decode (Hennessy page 414, figure 5.48; once the opcode portion of the

instruction is decoded, the system determines if the 0-5 part of the instruction will go to the ALU

control, the IR, instruction register, sends parts 31-26, or the opcode to the control logic to be

decoded).

7.   Referring to claim 8 Hennessy has taught a method of processing instruction within a

processor comprising:

Receiving a coded processor instruction (Hennessy page 414, figure 5.48; the instructions

in memory still require decoding, so they are "coded");

Determining a first functional unit which operates based on coded instructions, a second

functional unit which operates based on decoded information obtained from the coded

instruction, and a third functional unit, which each receive parts of the instruction (Hennessy

page 414, figure 5.48; the register file is the first destination, the ALU is the second destination

and the ALU control is the third destination);

Forwarding a first portion of the coded instruction having a first destination location

representing the first functional unit, to the first functional unit (Hennessy page 414, figure 5.48;

the instruction register sends portion of the instruction to the register file);

Decoding another portion of the instruction (Hennessy page 414, figure 5.48; ALU

control which decodes the lower portion of the instruction, parts 5-0);

Forwarding said another portion of the decoded instruction having a second destination

location representing the second functional unit, to the second functional unit (Hennessy page

414, figure 5.48; ALU from the ALU control which decodes the lower portion of the instruction,

parts 5-0);

Re-encoding any remaining portion of the instruction to a second code (Hennessy page

414, figure 5.48; the control unit in Hennessy has to both decode the opcode to determine which

type of instruction it is, and also re-encode the control instructions to be sent to operate the ALU

control); and

Forwarding the re-encoded instruction to a third location representing the third functional

unit (Hennessy page 414, figure 5.48; the re-encoded signal is sent to the ALU control).

8.   Referring to claim 10 Hennessy has taught wherein said second functional unit is a data

address generator (Hennessy page 414, figure 5.48; as shown, the ALU's output goes to the

ALUout and then on to the mux that feeds the address input to the Memory, which holds both

instructions and data).

9.   Referring to claim 11 Hennessy has taught wherein the third functional unit is a system

pipe (Hennessy page 414, figure 5.48; any portion shown in the figure is part of the system

pipeline, therefore the ALU control is part of the system pipe).

10.   Referring to claim 13 Hennessy has taught further comprising decoding and re-encoding

with a decoder (Hennessy page 414, figure 5.48; the control unit in Hennessy has to both decode

the opcode to determine which type of instruction it is, and also re-encode the control

instructions to be sent out to all of the functional units in the system).

11.   Referring to claim 16 Hennessy has taught wherein the decoder forwards control signals

to other portions of the processor (Hennessy page 414, figure 5.48; as shown, the control unit,

which decodes the instruction also send signals to the memory unit).

12.   Referring to claim 17 Hennessy has taught wherein the control signals may be in the first

code or the second code (Hennessy page 414, figure 5.48; they are in the second code, and since

the claim is in an alternative form, this anticipates the claim).

13.   Referring to claim 7 Hennessy has taught further comprising handling instructions in a

digital signal processor (Hennessy page 414, figure 5.48; the system of Hennessy uses digital

signals to communicate with all of the different logical components, therefore making it a digital

signal processor).

14.   Referring to claim 12 Hennessy has taught further comprising processing instructions

with a digital signal processor (Hennessy page 414, figure 5.48; the system of Hennessy uses

digital signals to communicate with all of the different logical components, therefore making it a

digital signal processor).

15.   Referring to claim 18 Hennessy has taught wherein the processor is a digital signal

processor (Hennessy page 414, figure 5.48; the system of Hennessy uses digital signals to

communicate with all of the different logical components, therefore making it a digital signal

processor).

Response to Arguments

16.   Applicant's arguments with respect to claims have been considered but are moot in view

of the new ground(s) of rejection.

Conclusion

17.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after
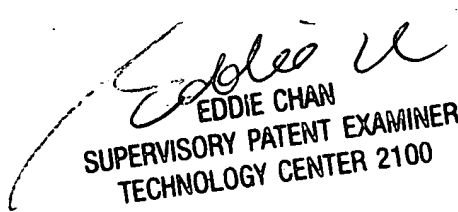
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Charles A Harkness whose telephone number is 703-305-7579.
The examiner can normally be reached on 8:00 A.M. – 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Eddie Chan can be reached on 703-305-9712. The fax phone numbers for the
organization where this application or proceeding is assigned are 703-746-7239 for regular
communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the receptionist whose telephone number is 703-305-7579.

Charles Allen Harkness
Examiner
Art Unit 2183
January 21, 2004

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